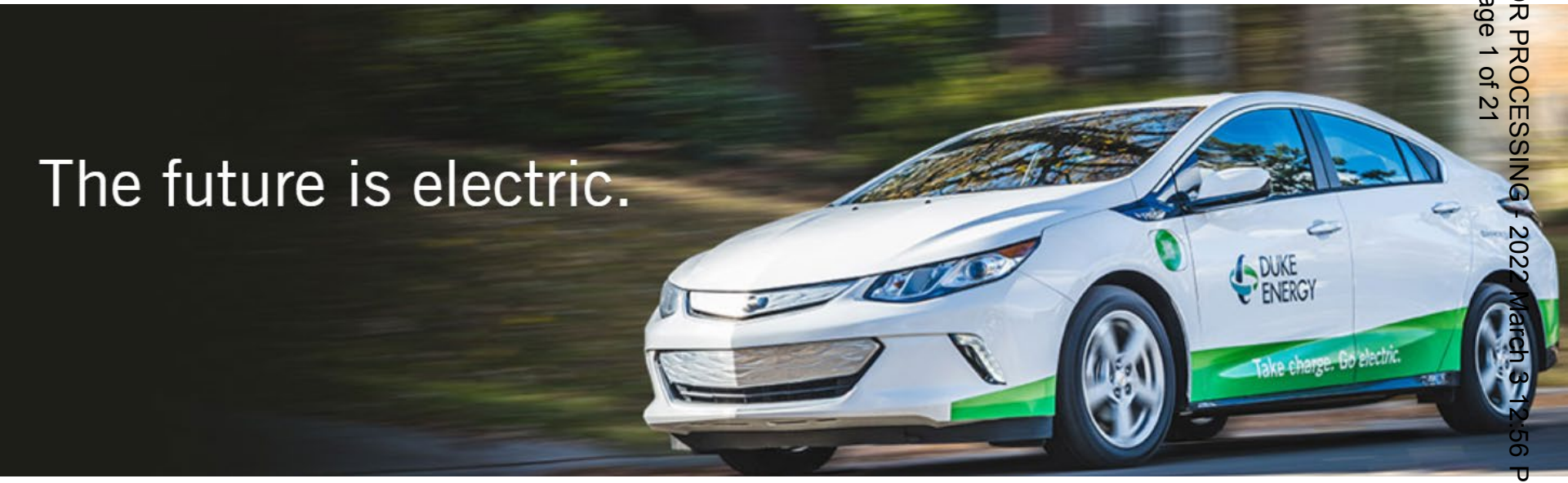
SC Electric Transportation Programs
Stakeholder Review



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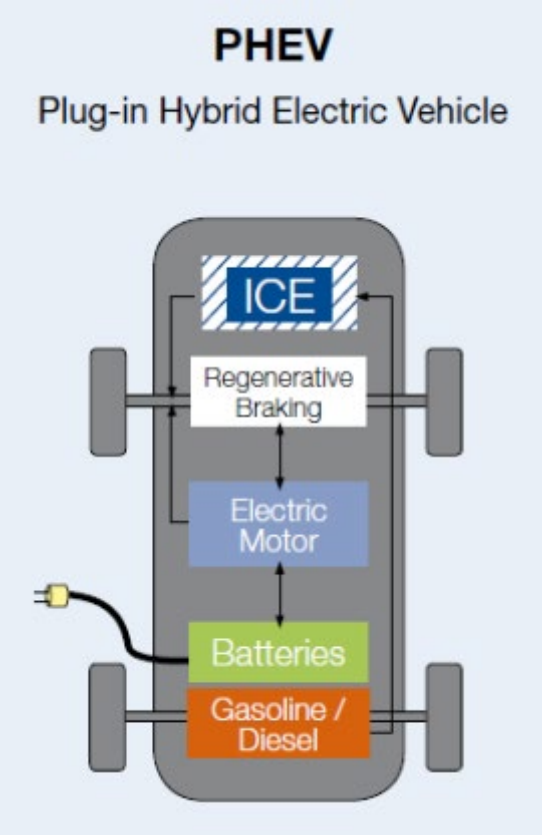
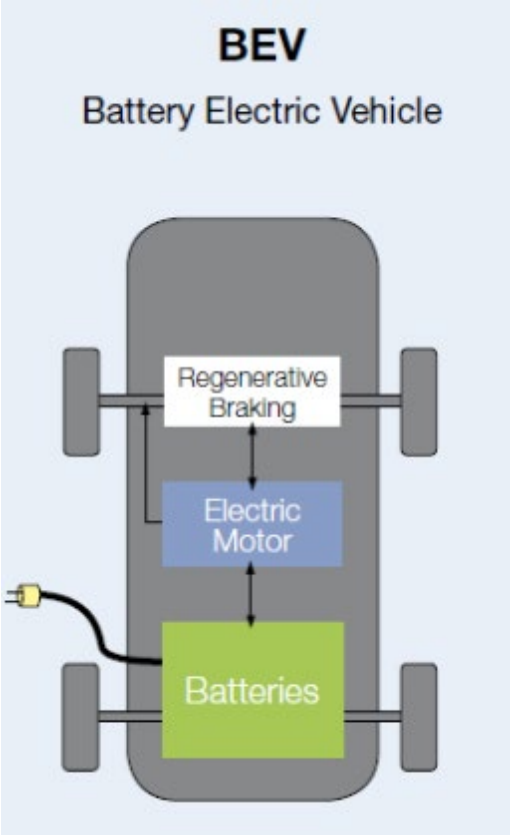
Agenda

- Introductions
- EV Charging 101
- State of EVs & Adoption in South Carolina
- Make-Ready Credit Program
- EVSE (Hardware/Software) Program
- Questions & Discussion

EV Types

- Benefits
  - Enough range for average commute, with the flexibility to switch to ICE for long-distance travel
- Limitations
  - Battery range typically tops out around 50 miles
  - Requires oil changes and engine maintenance
  - Does not reduce emissions when running on ICE



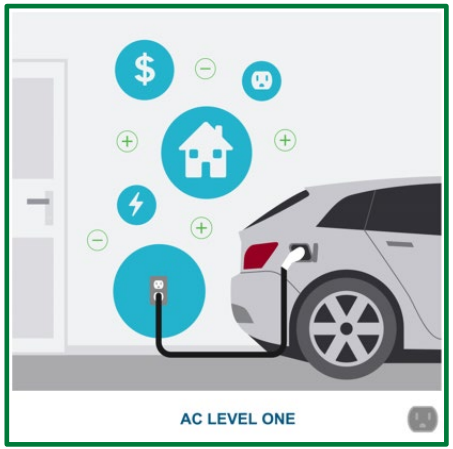


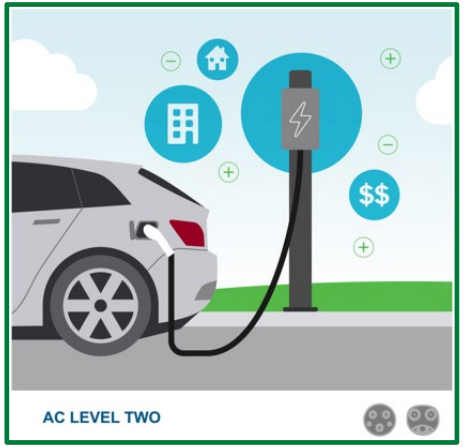
- Benefits
  - No engine, and therefore no engine maintenance nor tailpipe emissions, and increased storage space
  - Considerable fuel savings over an ICE vehicle
  - Can charge vehicle at any standard electrical outlet or charging station
- Limitations
  - Public charging infrastructure is limited and still developing in some areas

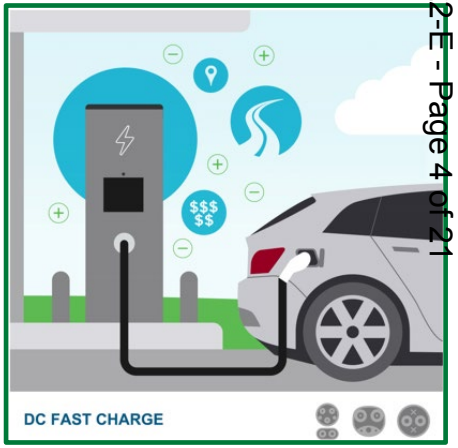
Categories of EVSEs

Electric
Vehicle
Supply
Equipment

aka, EV Charger







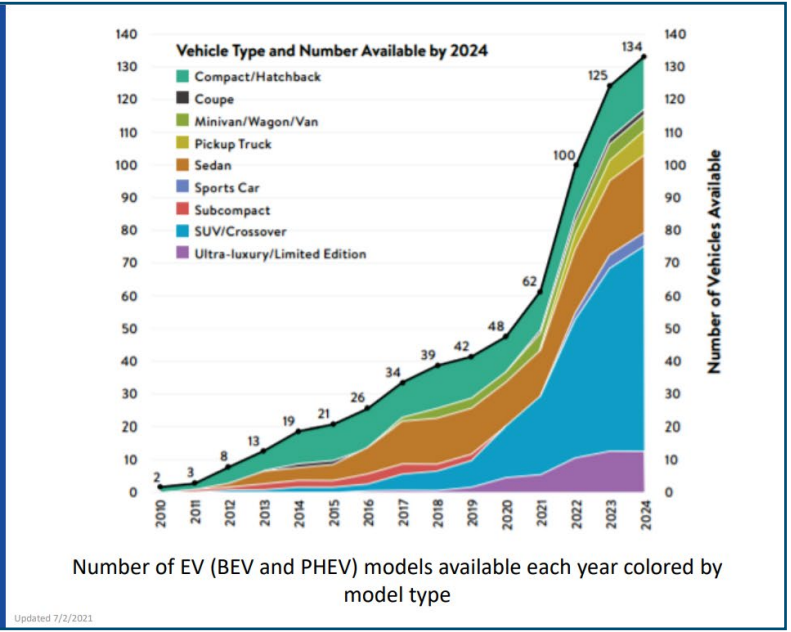
Charge Range / Time	3-5 miles per hour	20-30 miles per hour	3-10 miles per minute
Use Case(s)	Single-family home	MUD, Public, Workplace	Corridor
Power	~1.8 kW	3.3-19 kW	24-350 kW
Power Equivalent	Hair dryer	Electric Range	Small Fast Food up to Large Home Improvement
Requirements	None	Connectivity	Connectivity, Maintenance

Growth of Electric Vehicles – Options Drive Adoption

Trend 1:
Customer choice is increasing

~134 EVs available by 2024

About half of the models available in 2024 are SUV/Crossovers



Number of EV (BEV and PHEV) models available each year colored by model type

Plug In EVs in SC:

- EOY 2014 = 1,266
- EOQ3 2020 = 5,777
  - 30% average YOY growth over 5 ¾ years
- EOQ3 2021 = 9,208
  - 60% YOY growth in last 12 months

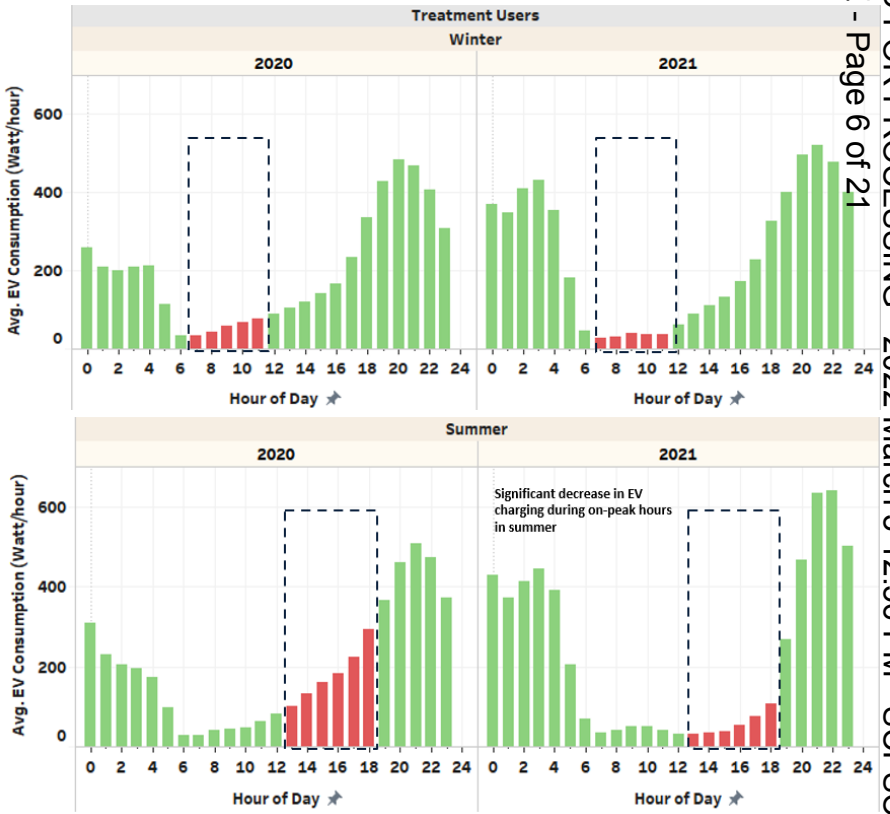
DEC Residential Rebate & Off-Peak Credit

Overview

- $500 upfront rebate upon installation of Level 2 charger
  - $13.89 per month credit for customers who observe off-peak charging
    - Customer may charge on-peak up to 3 times per month before loss of credit.

Status

- 310 Customers Enrolled
- 283 Active
- 27 Unenrolled
  - Little to no charging



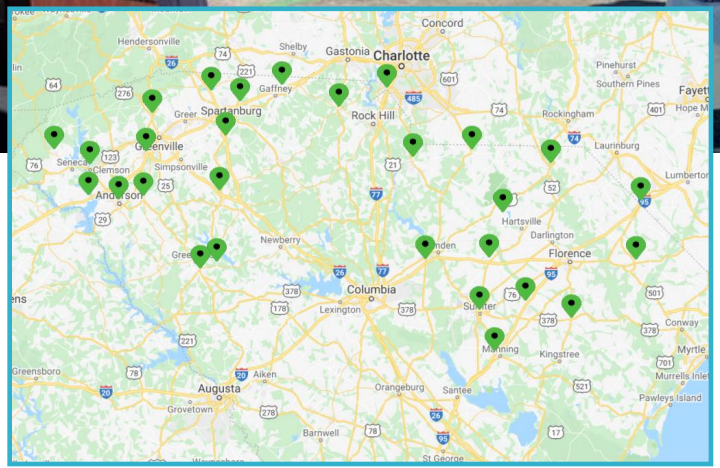
Park & Plug DC Fast Charging

Overview

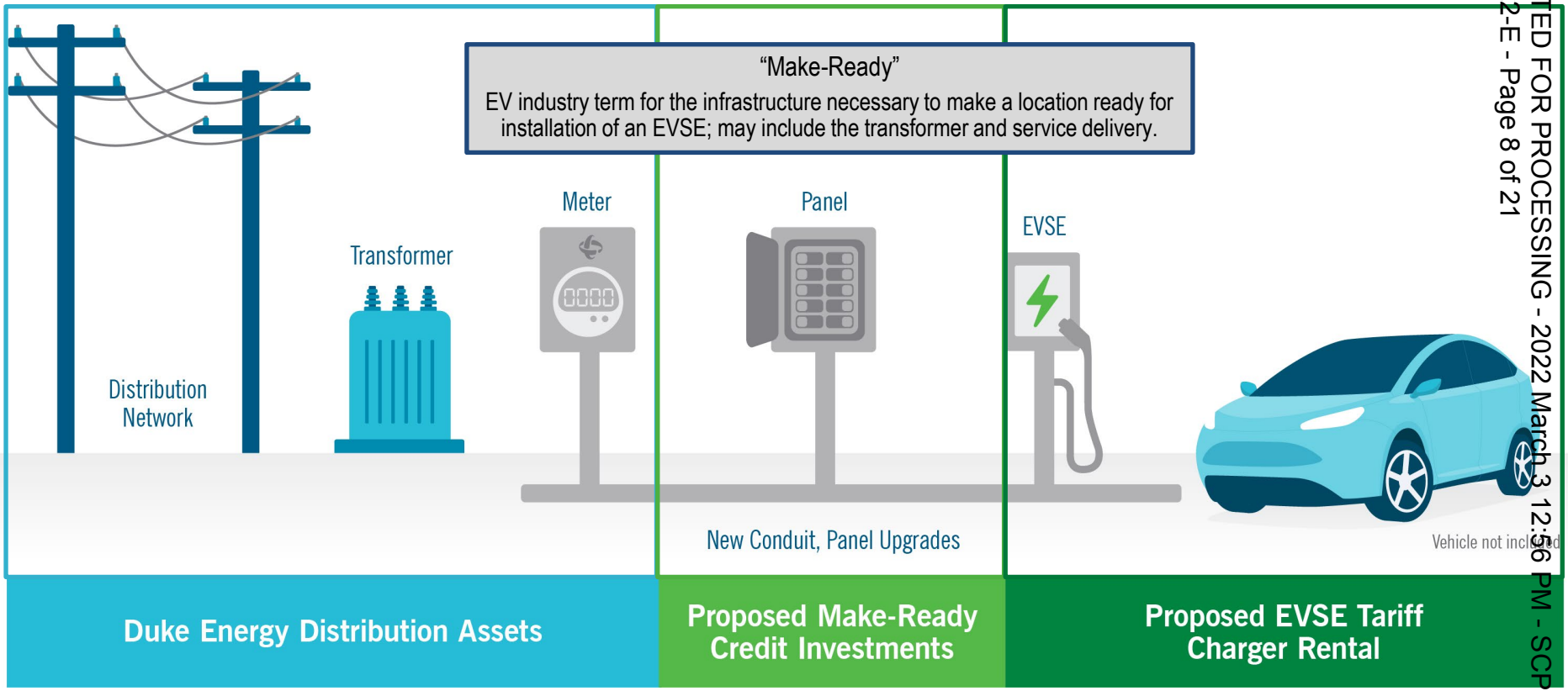
- 60 Chargers (40 DEC / 20 DEP)
- 2x 100+ kW equipment per site

Status

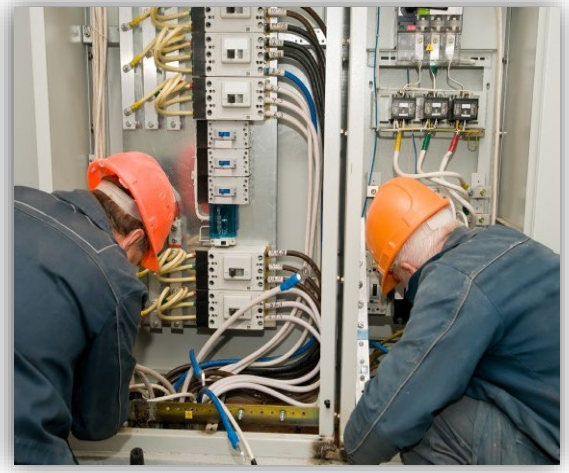
- (4) Sites Energized
- (2) Sites Underway
- (23) Sites Initiation & Design
  - Average 20% complete
- (2) Sites to be Recruited / Allocated



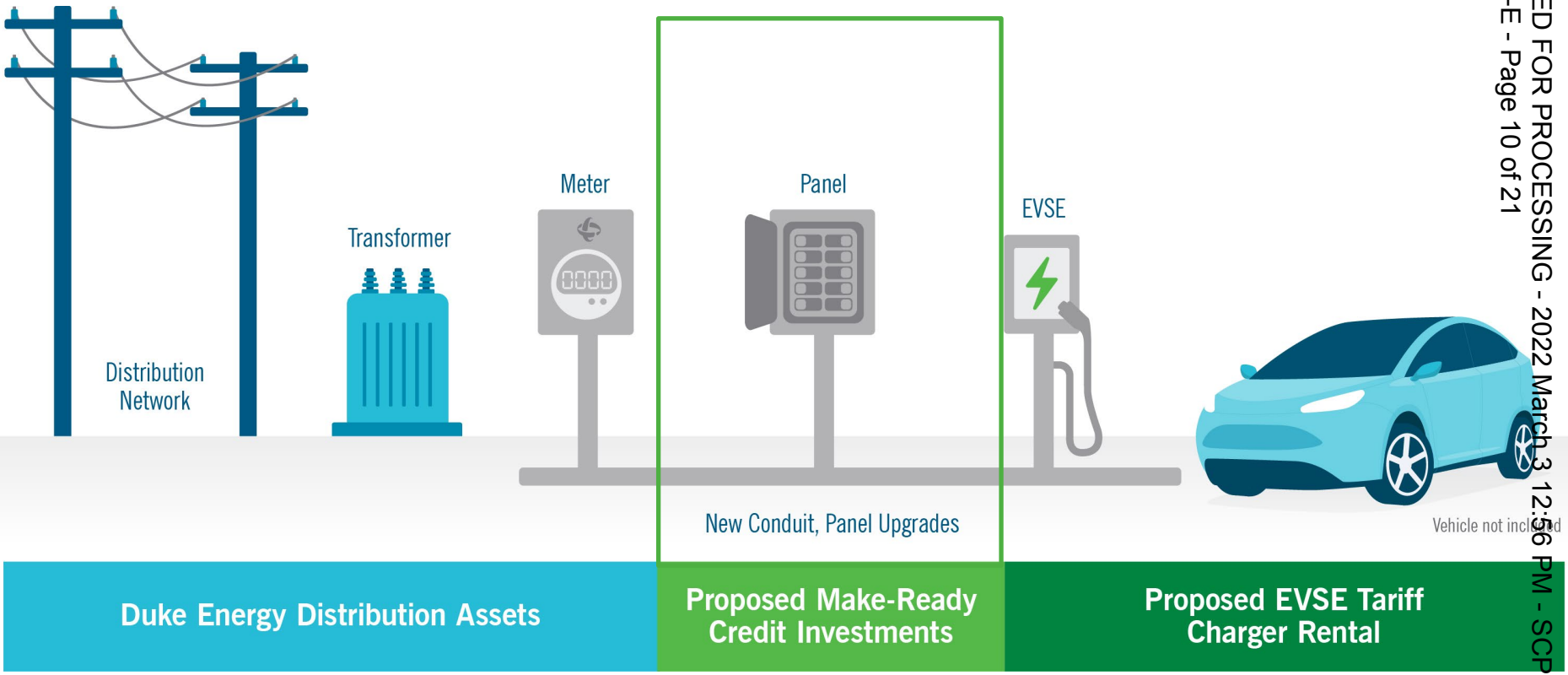
Visual Diagram: Make Ready Credit & EVSE Tariff Proposals



EV Make-Ready Program



Make-Ready Credit



Can We Learn From Our Line Extension Policy?

Cost of Extension ("Cost")

Revenue Credit ("RC") = # of Years x Estimated Annual Revenue		Cost – RC = Customer's Contribution*
Cost = $1,000	RC = $600 3 years x $200	Customer's Contribution = $400

* If > $0

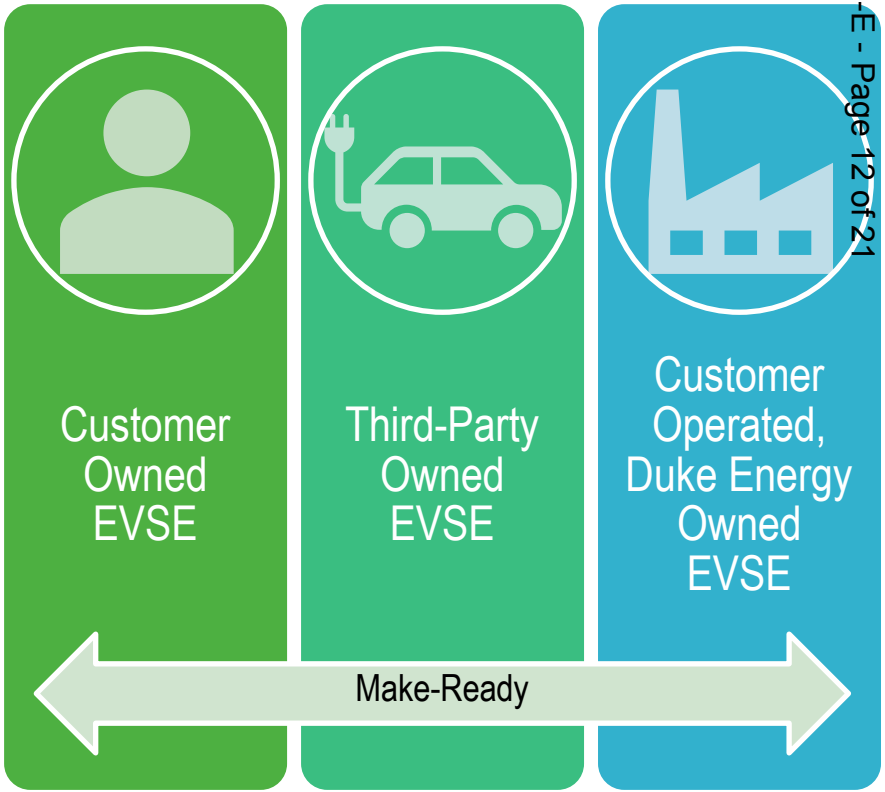
Line extension costs are recovered through normal utility rate-making processes. The make-ready proposal follows the same structure

Make Ready Credit Program Overview

Basics

- Aligns cost allocation of investments with future revenue.
- Investments can be in customer-sited enabling infrastructure, excluding the EV Charger, in order to serve load from electric vehicles.
- Customer obtains installation through a licensed and approved contractor.

Make-Ready Credit is a building block to create a viable EV ecosystem. It encourages residential and non-residential customers to invest in wiring upgrades to existing structures while providing a benefit to all utility customers by lowering the per unit cost of electricity[1].



1. Reference study by MJ Bradley filed as Exhibit A in PSCSC Docket #2018-321-E

EV Make-Ready Proposal Summary

	Residential (Retrofit)	Non-Residential (Retrofit)	Homebuilder (Res New Const.)
Revenue Credit Level	Based on 5 years* of estimated revenue	Based on 3 years* of est. revenue 5 years* for MFD and Housing Authority	Fixed credit per home
Credit Determination	Based on publicly-available data as to typical residential EV charging	Company and Customer develop a Customer Usage Profile based on estimated use of each station	Fixed; based on estimated labor and materials
Installer	Pre-Approved Contractor, Licensed Contractor	Licensed Contractor	Construction Company Pre-Approved by Duke
Key Documentation Required	Install Invoices, EV Registration, permits (if needed)	Install Invoices, Customer Usage Profile, permits	Evidence of installation

* If Customer is simultaneously participating in the Line Extension Plan, credits are based on one year of estimated revenue

Make-Ready Credit Benefits

For Participants

- Offset infrastructure costs for electrification
- Safe, high-quality installation
- Where applicable, design and configuration consulting to balance system size, costs and expansion potential
- Available for any EV charging installation, regardless of provider

For Non-Participants

- Receive the benefit of downward rate pressure from new EV loads.
  - Upfront cost of make ready credits ultimately reversed in most circumstances by additional future revenues received from participants' use of EVs.
  - Price signals for EV charging have the potential to flatten load curves and promote the more efficient and cost-effective use of the electric system.

Numerous States, including Arizona, California, and New York, have developed rate-based make-ready programs to spur EV adoption, but they all focus on costs.

Duke's revenue credit approach is unique and we believe best balances the needs of participants and non-participants. The revenue credit approach encourages customers to find the best installation price.

EVSE Pilot Tariff

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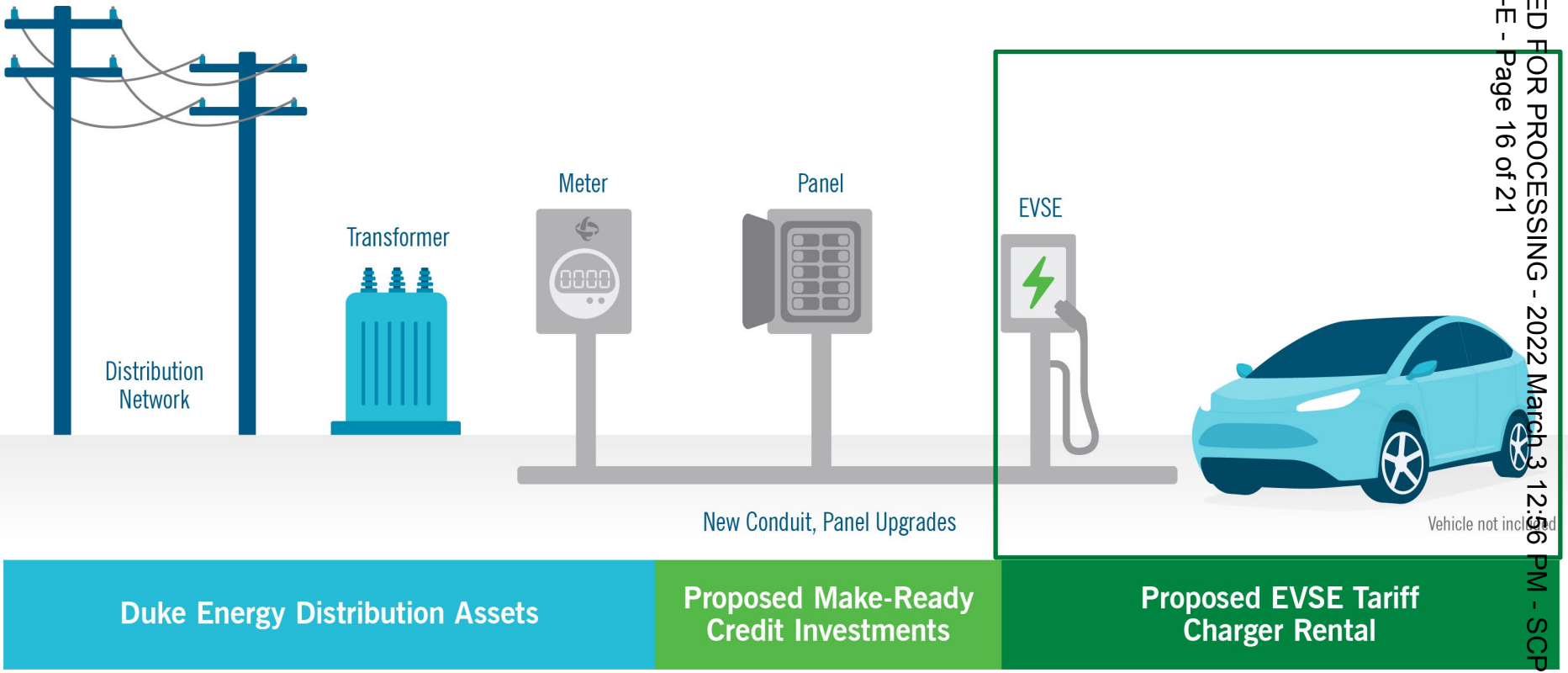
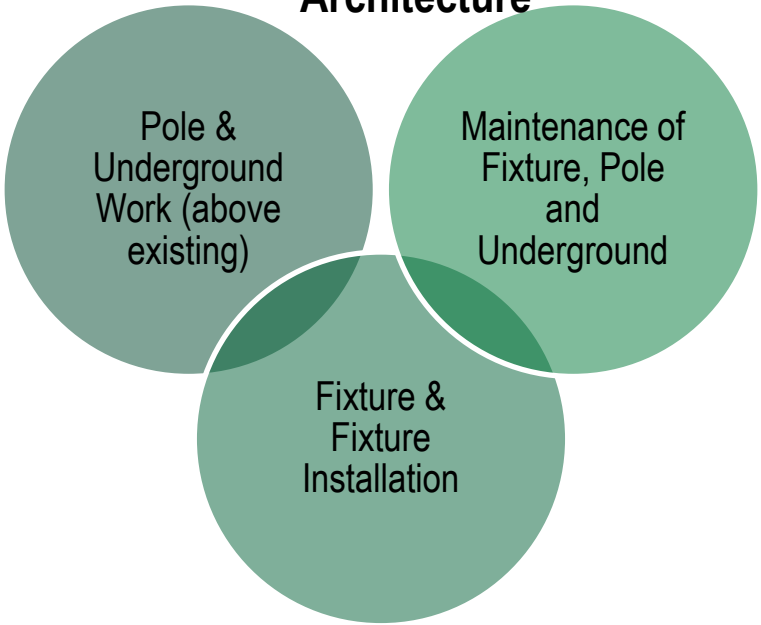
Electric Vehicle Supply Equipment (EVSE) Tariff



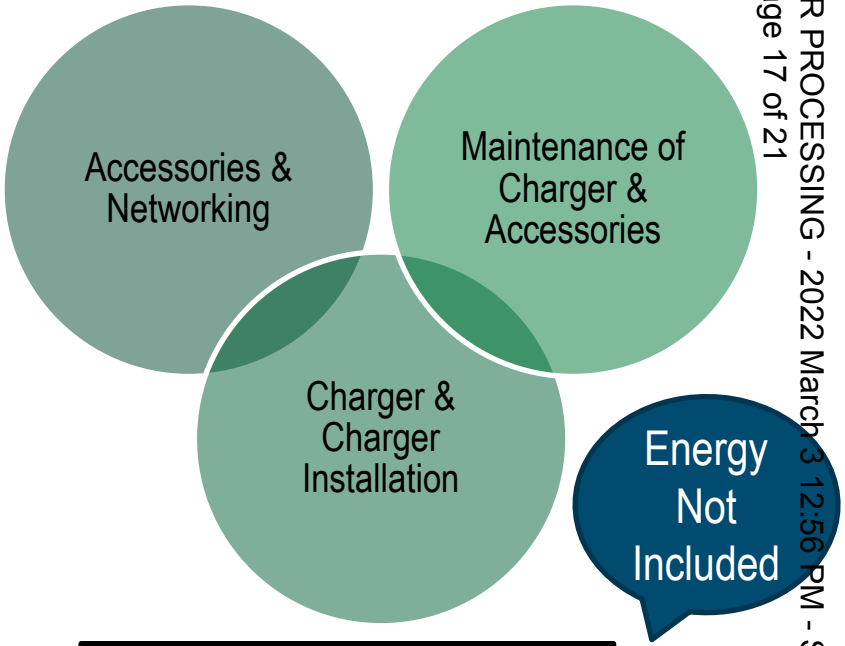
EVSE Approach Modeled on Outdoor Lighting

Outdoor Lighting Rate Architecture



One Rate Per Month Per Fixture, Maintenance & Energy

EV Service Equipment



One Rate Per Month Per Charger & Maintenance

EVSE Tariff Basics & Benefits

Basics

- Utility owns and installs infrastructure, customer operates it
- Provides utility expertise
- Open to all customers, expansive and flexible

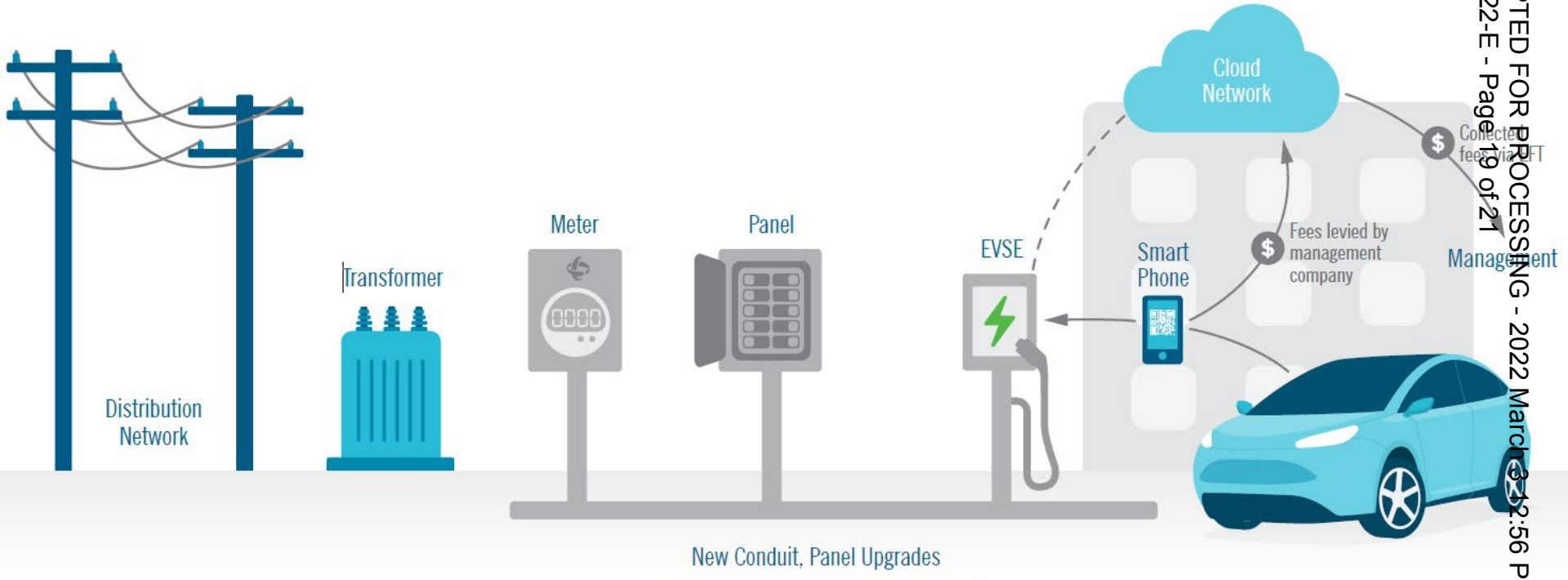
Participants Benefits

- Capital barriers removed
- Large selection of hardware & software, and accessories, such as:
  - Mounting Options
  - Extra Facilities
- Maintenance hassle eliminated
- General uncertainty mitigated

Non-Participant Benefits

- Bears no costs
- Receives benefit of downward rate pressure

Make-Ready & EVSE – Apartment Complex Example



Duke Energy Distribution Assets	Proposed Make-Ready Credit Investments	Proposed EVSE Tariff Charger Rental
Commission-approved Line Extension Plan (LEP)		

Questions & Discussion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